

Breast-feeding Trends in Cuba and the Americas¹

MANUEL AMADOR,² LUIS C. SILVA,³ & FRANCISCO VALDÉS-LAZO⁴



In order to analyze breast-feeding trends in the Region of the Americas vis-à-vis trends observed in Cuba, information was culled from a selection of national surveys on the prevalence and duration of breast-feeding conducted in the 1970s and compared with the results of a national survey carried out in Cuba in 1973. Similarly, information from PAHO Document HPN/92.7, which contains reports from countries of the Americas for the period 1986–1991, was compared with the results of the National Survey carried out in Cuba in 1990. A cessation index (CI) was calculated with a view to comparing the relative extent to which the cessation of breast-feeding occurred at different ages in the two time periods.

The study revealed a consistent pattern: typically, a relatively high percentage of newborns were initially breast-fed, but the prevalence of exclusive breast-feeding was low and the percentage of breast-fed infants declined quickly. However, the more recent data showed improvements in most of the countries involved with respect to both the prevalence and duration of breast-feeding.

Cuba was found to have intermediate values relative to the other countries. Although a slight decline in the initial prevalence of breast-feeding was observed in 1990 (as compared to 1973), notably higher percentages of infants were being breast-fed at 30, 60, 90, and 120 days, and the CI values for the corresponding intervals up to 90 days were lower. These results suggest that positive changes have taken place in factors promoting a longer duration of breast-feeding.

The decline in breast-feeding observed over the last quarter-century in the developing world has affected not only affluent families but also poor ones, especially those living on the outskirts of large urban centers (1–4). This phenom-

enon, which evolved quite rapidly, has had serious consequences for the health of young children—including higher mortality; increased incidences of marasmus and diarrhea associated with weaning; lasting impacts upon afflicted survivors; and heavy burdens on national economies and health programs, which have had to assign scarce resources to curative actions taken on a priority basis (5–8). All too often, precarious socioeconomic conditions have promoted development of these negative effects (9).

In contrast, during this same period many industrialized countries experienced an increase in the prevalence and duration of breast-feeding (10–14), although a new declining trend has emerged over the last decade (15, 16), especially among mothers whose babies would benefit the most (17).

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²Institute of Nutrition and Food Hygiene, Havana, Cuba. Reprint requests and other correspondence should be sent to Dr. Amador at the following address: Instituto de Nutrición e Higiene de los Alimentos (INHA), Calzada de Infanta 1158, La Habana 10300, Cuba.

³Higher Institute of Medical Sciences (Instituto Superior de Ciencias Médicas—ISCMH), Havana, Cuba.

⁴National Maternal and Child Department, Ministry of Public Health, Havana, Cuba.

The basic information available for Cuba comes from two national surveys conducted 17 years apart. In 1973, Moreno and Rubí (18) studied a national cohort of 4 228 nursing infants that were all of the newborns delivered during the first week of that year and surviving to the age of 7 days, who were also included in the National Investigation of Perinatal Mortality. These infants were followed monthly until the age of 7 months to obtain information about their food intake.

In 1990 the National Investigation of the Prevalence and Duration of Breast-feeding and the Feeding of Children under 1 Year of Age was conducted as a joint project by the Institute of Nutrition and Food Hygiene, the Higher Institute of Medical Sciences of Havana, and the National Maternal and Child Department of the Ministry of Public Health. This study, carried out from February to April 1990, was based on an equiprobabilistic sampling of all children under the age of 1 year in the country. In all, 6 688 infants (4 887 from urban areas and 1 801 from rural zones) ranging from 0 to 364 days of age were included in the investigation.

The sampling was stratified and was carried out in two stages, the strata being the 14 provinces and the Special Municipality of the Isle of Youth. Overall, 92 of Cuba's 169 municipalities were included in the survey. The survey instrument was a simple form containing 11 questions that was administered to the infants' mothers.

For the purposes of this investigation, exclusive breast-feeding was defined as a feeding practice in which maternal milk is the only milk nourishment received, and total breast-feeding was defined as a feeding practice in which babies are breast-fed irrespective of whether they receive some other type of milk or supplementary nourishment.

A logistic regression model was developed for analysis and presentation of the

data, and various indicators including the cumulative breast-feeding index and cessation index (CI) were introduced. These turned out to be very useful for overall measurement of the duration of breast-feeding (19–22).

From comparison of the two surveys it was possible to see that in both cases a high proportion of newborns were initially breast-fed (89.8% in 1973 and 84.2% in 1990). However, within 1 month a sharp drop was evident in the percentage of 1973 infants breast-fed, the prevalence of total breast-feeding in this group being 57.0% at 1 month, 45.2% at 2 months, 39.9% at 3 months, and 36.7% at 4 months. A continuous decline (without such a sharp initial drop) was also evident in the 1990 group, although the prevalences of total breast-feeding were generally higher at 1 month and beyond than they had been in 1973—these prevalences being 78.2% at 1 month, 67.5% at 2 months, 62.5% at 3 months, and 52.4% at 4 months (22).

Regarding exclusive breast-feeding, the 1990 study showed a prevalence that was initially 62.7%, much lower than the initial prevalence of total breast-feeding, and that declined much faster thereafter than the latter (see Table 2). However, no comparison could be made with the 1973 study, because that study provided no exclusive breast-feeding data.

In the Americas, as in many other parts of the world, the characteristics of breast-feeding tend to vary from country to country. The purpose of this article is to compare the results of the 1973 and 1990 Cuban surveys with the information available from similar studies conducted in other countries of the Region.

MATERIALS AND METHODS

Information was taken from a selection of national surveys on the prevalence and duration of breast-feeding that were carried out in various countries of the Amer-

icas during the 1970s. This was obtained through a recompilation of data made by the World Health Organization that was published by its Family Health Division (3). Also, a representative population survey conducted between 1970 and 1979 was used as a source of data for each country of the Americas, the most appropriate survey being selected in cases where there were more than one. The available data were then compared with the findings from the 1973 Cuban survey (18).

In addition, data were taken from a report based on a questionnaire sent to the health authorities of the Americas in 1991 and from the Demographic and Health Surveys conducted between 1986 and 1990 (23), these data being contained in PAHO Document HPN/92.7 (24). The available data were compared with the results from Cuba's 1990 National Investigation on the Prevalence and Duration of Breast-feeding and the Feeding of Children under 1 Year of Age (19, 22).

In order to be able to compare the information in terms of a single indicator, a cessation index (CI) was calculated at 1 month (30 days), 2 months (60 days), 3 months (90 days), 4 months (120 days), and 6 months (180 days) in those cases where it was possible to do so. This CI was calculated as follows:

$$CI = \frac{P_o - P_t}{P_o} \times 100$$

where P_o is the initial prevalence for the time interval in question and P_t is the final prevalence for that interval. This equation yields the percentage of those infants breast-feeding at the start of the interval who had stopped breast-feeding by the end of the interval.

For both analytical periods the CI was calculated for total breast-feeding over the following intervals: commencement–1 month (30 days), 1–2 months (31–60 days), 2–3 months (61–90 days), 3–4 months (91–120 days), and 4–6 months (121–180

days). In addition, CIs were calculated for total breast-feeding in the 1970s over the following intervals: commencement–3 months, 3–6 months, and cumulative commencement–6 months. Finally, CIs were calculated for exclusive breast-feeding during the 1986–1990 period over the following intervals: commencement–1 month, 1–3 months, and cumulative commencement–3 months.

RESULTS

Table 1 shows information derived from national surveys conducted in Cuba and 11 other countries during the period 1973–1979. The proportion of initially breast-fed infants exceeded 90% in half the countries and exceeded 80% in all others except the United States of America. However, the CI for total breast-feeding during the commencement–3 month interval varied greatly from one country to another, the highest being found in Cuba and the United States (55.5% and 52.8%, respectively). At 6 months there were a number of countries, most notably Peru and Mexico, where the 3–6 month CI for total breast-feeding was relatively low—indicating a relatively low percentage of all weaning occurred in this period. Some countries had relatively small 3–6 month CIs because much weaning had already occurred by 3 months of age (as in Cuba and the United States) while others had them because most weaning probably occurred after 6 months (as in Peru and Mexico).

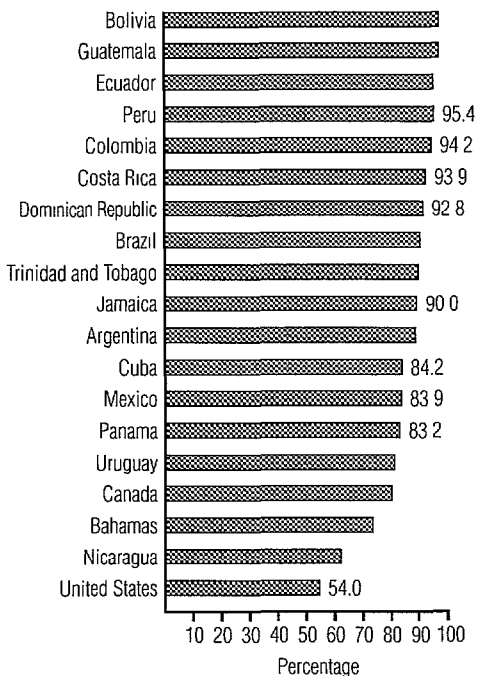
The data available for the 1986–1991 period only permit comparison of the initial total prevalences of breast-feeding. Figure 1 shows the percentages of infants initially breast-fed in Cuba and 18 other countries of the Region. If these figures are compared with the Table 1 data, it can be seen that these percentages appeared to have increased in Colombia, Costa Rica, the Dominican Republic, Peru,

Table 1. Data derived from surveys conducted in the 1970s showing percentages of infants in 12 countries of the Americas that were initially breast-fed, breast-fed at 3 months, and breast-fed at 6 months, together with cessation indexes (CI) for total breast-feeding in the commencement–3 month, 3–6 month, and commencement–6 month periods.

Country	Years	Size of sample	Prevalence (%)			Cessation indexes (CI) (%)		
			Initial	3 months	6 months	Comm.–3 months	3–6 months	Comm.–6 months
Jamaica	1975–1976	1 967	94	87	67	7.4	22.9	28.7
Colombia	1976–1977	2 556	93	78	63	16.1	19.2	32.2
Paraguay	1979	2 252	92	84	74	8.7	11.9	19.5
Peru	1977–1978	3 099	92	78	72	15.2	7.7	21.7
Dominican Republic	1974	2 252	91	83	74	8.8	10.8	18.7
Panama	1975–1976	2 052	91	52	41	42.8	21.1	54.9
Cuba	1973	4 228	90	40	32	55.5	19.0	64.0
Guyana	1975	2 662	88	77	60	12.5	22.1	31.8
Mexico	1974	2 020	85	71	66	16.5	7.0	22.3
Venezuela	1977	2 048	85	65	44	23.5	32.3	48.2
Costa Rica	1976	824	82	58	42	29.2	27.5	48.8
United States	1975	10 067	36	17	15	52.8	11.8	58.3

Sources: References 3 and 18.

Figure 1. Percentages of initially breast-fed children in 19 countries of the Americas, as indicated by data from the period 1986–1991. The numbers on the right, corresponding to selected horizontal bars, provide a basis for comparison with the numbers in Table 1.

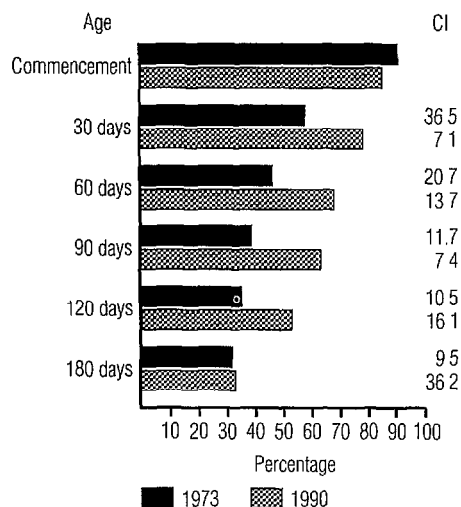


and the United States, while declines were registered in Cuba, Jamaica, Mexico, and Panama.

However, in Cuba the CI for total breast-feeding over the commencement–3 month interval was substantially smaller in 1990 than in 1973 (25.8% in 1990 compared to 55.5% in 1973), while the total breast-feeding CI for the 3–6 month interval was substantially larger (46.6% in 1990 compared to 19.0% in 1973). In the end, the cumulative figure at 6 months showed a slight overall decline (to 60.3% versus 64.0% in 1973). In 1990 the prevalences of total breast-feeding at 3 and 6 months were 62.5% and 33.4%, respectively.

Figure 2 shows the prevalences of total breast-feeding in Cuba at commencement, 30, 60, 90, 120, and 180 days in 1973 and 1990, as well as the CIs over the various time intervals involved. Except for a slightly lower initial prevalence, the 1990 prevalences were higher at all the indicated ages. CI values for commencement–30, 31–60, and 61–90 days were also considerably lower in 1990; their subsequent increase in the 91–120 and 121–180 day periods demonstrated

Figure 2. Percentages of infants who were breast-fed in Cuba initially and at 30, 60, 90, 120, and 180 days, as indicated by the 1973 and 1990 data. The numbers at right correspond to the CI for commencement–30 days, 31–60 days, 61–90 days, 91–120 days, and 121–180 days in 1973 and 1990.



a tendency toward later (3–6 month) weaning in 1990.

Prevalences of exclusive breast-feeding in Cuba at various ages, as indicated by the 1990 survey, are shown in Table 2. The data indicate that the percentage commencing exclusive breast-feeding (62.7%) was considerably lower than the total percentage commencing breast-feeding (84.2%) and that it declined rapidly, the commencement–1 month CI being 21.4%.

Figure 3 shows the prevalences of exclusive breast-feeding at 1 and 3 months—as well as the CI for the commencement–1 month, 1–3 month, and commencement–3 month intervals—for Cuba and seven other countries of the Americas within the 1986–1991 period. The figure indicates that exclusive breast-feeding prevalences were very low at 1 month in Brazil and the Dominican Republic, but relatively high in Costa Rica and Argen-

Table 2. Prevalence of exclusive breast-feeding in Cuba in 1990, among infants of different ages, starting with commencement of breast-feeding.

Age	Prevalence (%)
Commencement	62.7
15 days	56.1
30 days	49.3
60 days	39.0
90 days	24.5
120 days	15.7
180 days	5.9
364 days	0.2

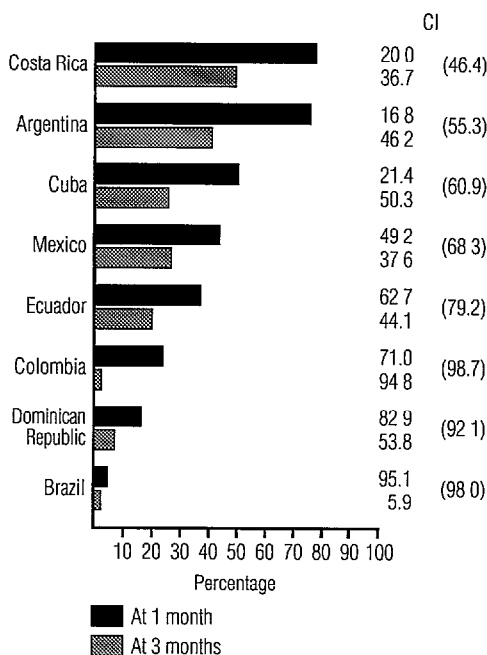
Source: Reference 19

tina. Another aspect of interest is the difference between the CI values for the commencement–1 month and 1–3 month intervals. Specifically, the three countries with high initial prevalences and low or intermediate commencement–1 month CI values (Argentina, Costa Rica, and Cuba) showed relatively higher CI values during the 1–3 month interval, whereas the opposite was true in Brazil and the Dominican Republic, where the commencement–1 month CI values were very high.

DISCUSSION AND CONCLUSIONS

Since the joint WHO/UNICEF 1979 Declaration on Infant and Young Child Feeding (25), and in some cases since the preceding decade, countries of the Americas have been developing plans to promote breast-feeding and have been getting mixed results. The percentage of initially breast-fed newborns is usually higher than 80% except in the Bahamas, Nicaragua, and the United States; and even in these countries increases have been observed. However, in certain countries (Cuba, Jamaica, Mexico, and Panama) declines in the initial prevalences have been observed.

Figure 3. Percentages of infants who were exclusively breast-fed at 1 and 3 months of age in eight countries of the Americas, according to data from the 1986–1991 period. The numbers at right correspond to the CI for commencement–1 month, 1–3 months, and commencement–3 months, the cumulative commencement–3 month CI being shown in parentheses.



This latter downward trend has been associated with early introduction, sometimes prior to first contact with the breast, of water or glucose solutions and bottle formulas that interfere with successful breast-feeding and make for a low prevalence of initial exclusive breast-feeding as well as a rapid decline thereafter. Such rapid declines appear in the cases of Brazil, Colombia, the Dominican Republic, and Ecuador, where the CIs found for the commencement–1 month interval were very high. Several studies in the Caribbean area have confirmed the traditional pattern of mixed feeding (26) and early introduction of the bottle with milk for-

mulas (18, 27–30), a pattern that changed little in the 1980s (31–36).

Calculation of the CI for different intervals makes it possible to examine and compare breast-feeding patterns in different countries. If the 1970s total breast-feeding CI values shown for various countries in Table 1 are compared, it may be seen that those for the commencement–3 month interval were considerably higher than those for the 3–6 month interval in several countries including Cuba, the United States, and Panama—indicating that weaning tended to take place relatively early in those countries. The opposite was true in a number of other countries including Colombia and the Dominican Republic, where the commencement–3 month CI values were relatively low, 3–6 month CI values were higher, and the net effect of a wide range of biological, educational, and social factors was apparently tending to prolong the duration of breast-feeding.

When the 1986–1991 CI values for exclusive breast-feeding in Figure 3 are compared, it may be seen that the commencement–1 month values were relatively high in Brazil, Colombia, the Dominican Republic, Ecuador, and Mexico, whereas in Argentina, Costa Rica, and Cuba they were relatively low. Such lower CI values, especially in the first month, tend to correlate with a better quality of administrative and educational practices in the maternity services directed at promoting and prolonging breast-feeding.

In 1984 a study was conducted in Cuba in which a group of 1 483 infants born in a maternity hospital in Havana serving two municipal districts in the heart of the city were followed to the age of 1 year. It was found that 94.5% of these infants started out being breast-fed, but that by day 15 the total percentage of breast-fed babies had dropped to 79.0%; by day 30 to 67.7%; and by day 60 to 49.6% (35).

Another study conducted in Cuba at

the end of 1987, which followed 100 children from birth until the age of 1 year, also showed a pattern of early weaning (36).

The 1990 National Investigation cited earlier (19, 37) found that 15.8% of the infants studied were bottle-fed from birth, and that this proportion rose to 21.8% at 1 month and 37.5% at 3 months. A pattern involving early introduction of solid foods was also noted (38).

The low initial prevalences of exclusive breast-feeding, like those of total breast-feeding, are closely linked to institutional practices in maternity services (39–41). The UNICEF/WHO initiative that grants maternity services the status "Baby-friendly Hospital" is based essentially on implementation of the "ten steps to successful breast-feeding" set forth in the Innocenti Declaration on the Protection, Promotion, and Support of Breast-feeding (42) that establishes a set of organizational measures designed to encourage initiation and prolongation of breast-feeding, especially exclusive breast-feeding.

In Cuba the Baby-friendly Hospital Program was instituted in 1992 at six large maternities in different parts of the country; another 10 joined the program in 1993. The targets set for 1995 and 2000 in regard to increasing the prevalence and duration of breast-feeding are reflected in the National Action Program for Fulfillment of the Agreements of the World Summit for Children (43). Actions for the promotion of breast-feeding come under the National Maternal and Child Care Program, and specifically its components of diarrheal disease control, nutrition, and family planning (44).

That Cuba has succeeded in prolonging the duration of breast-feeding over the last decade may be deduced from the higher 1990 prevalences of total breast-feeding found among infants up to 6 months of age and the 1990 CI values for

commencement–30 days, 31–60 days, and 61–90 days, which were lower than those found in 1973.

Factors that have contributed to this result include the granting of 12 weeks of maternity leave on full salary; the recent extension of this to 6 months at 60% salary; and educational initiatives being carried out by health teams (particularly in areas that receive family physician care) and mass organizations (especially the Federation of Cuban Women).

Analysis of the information available makes it possible to conclude that over the last two decades the Region of the Americas has seen an increase in the prevalence and duration of breast-feeding, although there continues to be a pattern of relatively high initial prevalence followed by a rapid decline and a low prevalence of exclusive breast-feeding. In Cuba, except for a slight decline in the initial prevalence of total breast-feeding, improvements were seen in 1990 relative to 1973 at each age studied up to 6 months. Within this context, the CI was found to be a useful tool for comparing trends in different countries.

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Corrigendum

In the article "The Effects of Breast-feeding and the Pace of Childbearing on Early Childhood Mortality in Mexico," by Alberto Palloni et al. (*Bulletin of PAHO*, Vol. 28, No. 2, 1994, pp. 93-111), an editorial error resulted in some of the reference numbers in the text not matching those in the reference list. On p. 96, reference numbers 34 through 41 in the text correspond to numbers 30 through 37, respectively, in the reference list; on pp. 97-106, numbers 43 through 46 in the text correspond to numbers 38 through 41, respectively, in the reference list.